

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Amended) An infinitely-variable transmission comprising:

a rotational input member, and a rotational output member;

a pair of variable velocity-ratio gear sets;

a multi-directional coupling associated with the gear sets;

an actuator associated with the coupling for coupling the gear sets to the rotational members over a common angular period for providing a uniform velocity ratio between the rotational members over the angular period, the actuator comprising a pair of shadow cams coupled to one of the rotational members, wherein each of the shadow cams is synchronized with a respective one of the gear sets for altering a coupling state of the coupling; and

a phase angle variator associated with at least one of the gear sets for varying a rotational angular displacement between the gear sets for varying the uniform velocity ratio.
2. (Cancel)
3. (Cancel)
4. (Amended) The transmission according to claim [3] 1, wherein at least one of the shadow cams includes a lobe for coupling the respective gear set to the rotational members within the angular period.

5. (Amended) The transmission according to claim [3] 1, wherein the shadow cams comprise a pair of bearing races, and a bearing communicating with the races, each said bearing race including a race portion for coupling the respective gear set to the rotational members within the angular period.

6. (Amended) The transmission according to claim [3] 1, wherein the shadow cams comprise a pair of bearing half-races, the half-races together comprising a common race, and a bearing disposed within the common race, each said bearing half-race including a race portion for coupling the respective gear set to the rotational members within the angular period.

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7. (Amended) The transmission according to claim [3] 1, wherein the shadows cams comprise a pair of actuator gears coupled to one of the rotational members, each said actuator gear including a riser portion for coupling the respective gear set to the rotational members within the angular period.

8-15. (Cancel)

16. (Amended) [The transmission according to claim 1] An infinitely variable transmission comprising:

a rotational input member and a rotational output member;

a pair of variable velocity-ratio gear sets;

a multi-directional coupling associated with the gear sets;

an actuator associated with the coupling for coupling the gear sets to the rotational members

over a common angular period for providing a uniform velocity ratio between the rotational members

over the angular period; and

a phase angle variator associated with at least one of the gear sets for varying a rotational angular displacement between the gear sets for varying the uniform velocity ration;

wherein the multi-directional coupling comprises:

a race including a first tubular friction surface,

a tubular member including a first bearing surface,

a tubular slipper including a second tubular friction for coupling to the first tubular friction surface, and a second bearing surface opposite the second friction surface, the second bearing surface being coaxial to the first bearing surface and, together with the first bearing surface, defining a channel disposed therebetween, and

a plurality of roller elements disposed in the channel in abutment against the bearing surfaces, the channel including a pocket retaining at least one of the roller elements therein for coupling the race to the tubular member as the tubular member and the slipper rotate relative to one another; and the actuator is configured to prevent rotational movement of the slipper relative to the tubular member over the angular period.

17. (Original) The transmission according to claim 16, wherein the first friction surface comprises a conical friction surface, the second tubular friction surface being shaped to mate with the conical friction surface, and the actuator includes an actuator ring for moving the slipper axially relative to the race for altering a coupling state of the coupling.

18. (Original) The transmission according to claim 16, wherein the first friction surface comprises a conical friction surface, the second tubular friction surface being shaped to mate with the

conical friction surface, and the actuator includes an actuator ring for moving the race axially relative to the slipper for altering a coupling state of the coupling.

19. (Amended) [The transmission according to claim 1,] An infinitely variable transmission comprising:

a rotational input member and a rotational output member;

a pair of variable velocity-ratio gear sets;

a multi-directional coupling associated with the gear sets;

al an actuator associated with the coupling for coupling the gear sets to the rotational members over a common angular period for providing a uniform velocity ratio between the rotational members over the angular period; and

a phase angle variator associated with at least one of the gear sets for varying a rotational angular displacement between the gear sets for varying the uniform velocity ration;

wherein the variable velocity-ratio gear sets are coupled to one of rotational members, and the transmission includes a torque-splitter coupled to the other of the rotational members for conveying torque between the gear sets and the other rotational member.

20. (Original) The transmission according to claim 19, wherein the torque-splitter comprises a differential, the differential including a pair of bevel gears, a cage, and a pinion rotatably coupled to the cage and meshing with the bevel gears.

21. (Original) The transmission according to claim 20, wherein the cage is coupled to one of the variable-ratio gear sets, a first of the bevel gears is coupled to the other of the variable-ratio gear sets, and a second of the bevel gears is coupled to the one rotational member.

22. (Original) The transmission according to claim 20, where a first of the bevel gears is coupled to one of the variable-ratio gear sets, a second of the bevel gears is coupled to the other of the variable-ratio gear sets, and the cage is coupled to the one rotational member.

al 23. (Original) The transmission according to claim 19, wherein the torque splitter comprises a planetary gear assembly.

24. (Original) The transmission according to claim 19, wherein the torque splitter comprises a coplanar reverted gear-train loop, the coplanar reverted gear-train loop including a pinion, an annular internal gear disposed around the pinion and being coaxial thereto, and a cage assembly comprising a ring gear including an inner surface engaging the pinion and an outer surface engaging the annular gear, the cage assembly further comprising an eccentric guide for disposing the ring gear coplanar to and eccentrically with respect to the pinion and the annular gear.

25-35. (Cancel)
